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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,753	04/09/2004	Rolf M. Alter	14046 B	1880

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EXAMINER
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NEWTON, JARED W

ART UNIT	PAPER NUMBER
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3634

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

*HL*

## Office Action Summary

Application No.

10/821,753

Applicant(s)

ALTER, ROLF M.

Examiner

Jared W. Newton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date: _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

It is noted that the application received on April 09, 2004 does not contain an Information Disclosure Statement in compliance with 37 CFR 1.98.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4, 8, 10, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,205,221 to Melin et al.

In regard to claims 1 and 8, Melin discloses a board structure intended to support a load comprising an overall load carrying shelf or board 10 wherein said board comprises a core of honeycomb cells 12; an upper skin or cover panel 16 and a lower skin or cover panel 18; wherein said honey comb core cells 12 are sandwiched between said upper skin 16 and lower skin 18 forming a composite structure; said shelf further comprising a plurality of through bores 22,32,34 passing vertically through said shelf (see FIGS. 1 and 7). Melin further discloses said shelf as manufactured from a light material (see Column 2, Line 57). It is noted that the structure according to Melin is recited as adapted to receive a load (see Column 2, Line 51). The claimed property of a strong composite structure (Claim 1, Line 9) is inherent in both the construction and the

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intended use noted above of the structure according to Melin (see Column 3, Lines 47-65).

It is noted that the applicant's limitations, "wherein said plurality of through bores through said shelf allow flames under said shelf to pass upwardly therethrough instead of sidewardly therealong whereby an extinguishant thereabove can pass downwardly therethrough for extinguishing flames thereunder" in lines 11-15 of claim 1 are considered to be met by the Melin reference since the structure of the Melin reference is capable of allowing flames to pass upwardly, and extinguishant to pass downwardly through said through bores 22,32,34. It is noted that the claim(s) do not positively require the passing of flames or extinguishant. Hence, since flames and extinguishant could inherently pass vertically through said through bores, the Melin reference is considered to meet the functional limitations of the claim(s).

In regard to claims 3, 4, 10, and 11, Melin discloses a structure including all of the limitations of claims 1 and 8 as advanced above. Melin further discloses said honeycomb core of said structure comprising walls 14 defining individual honeycomb cells 12 (see FIG. 1). Melin further discloses a border 24, wherein said border encloses a periphery of said structure (see FIG. 1).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,709,158 to Wareheim in view of U.S. Patent No. 4,859,517 to Hull.

In regard to claims 1 and 8, Wareheim discloses an inherently light and strong shelf structure comprising a grid 50 defining a plurality of through bores extending vertically through said shelf wherein said shelf is functionally capable of allowing flames to pass upwardly through and extinguisher to pass downwardly through said bores (see FIG. 5).

In regard to claims 2 and 9, Wareheim further discloses said shelf comprising a surface area wherein said plurality of through bores through said shelf occupy approximately 50% of said surface area (see FIG. 5). It is further noted that the recitation, "approximately 50%" is a design choice according to the present invention, and it would have been obvious to one of ordinary skill in the art at the time of the invention to construct a shelf comprising through bores occupying any percentage of the overall surface area, depending on the application of said shelf.

In regard to claims 3 and 10, Wareheim further discloses said shelf comprising a border encompassing the periphery of said shelf, said border defined by sides 52, 54, 56, and 58 (see FIG. 5).

The claims differ from the Wareheim reference in requiring: (a) a honeycomb core sandwiched between an upper and lower skin (claims 1 and 8); (b) the honeycomb core comprising walls and cells (claims 4 and 11); (c) the inserts lining the through bores (claims 6 and 13); (d) the inserts as tapes affixed to the walls of the honeycomb

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cells (claims 7 and 14); and (e) the border as a tape that is affixed to the honeycomb core.

With respect to (a), Hull teaches a honeycomb structure 10 comprising a core layer 12 sandwiched between and bonded to upper 14 and lower 16 skin layers (see FIG. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the honeycomb core and upper and lower skin structure as disclosed by Hull as the core for the overall shelf structure 40 according to Wareheim. The motivation for constructing the shelf of a honeycomb core would be to further lighten the overall shelf by requiring less material for its construction, while retaining its strength and load bearing characteristics. It is further noted that it is well known in the art of support structures to construct the cores of panel, pallet, and shelf members with a honeycomb configuration in order to increase strength-to-weight ratios. Such structures are disclosed in U.S. Patent Nos. 5,460,865 to Tsotsis and 5,205,221 to Melin.

With respect to (b), Hull further discloses said honeycomb core comprising cells 18 made of walls in a hexagonal configuration (see FIG. 1). It would have been further obvious to one of ordinary skill in the art at the time of the invention to incorporate the cells and walls of the honeycomb core as disclosed by Hull in the shelf as disclosed by Wareheim. It is noted that a walled cell configuration according to the claims and as disclosed by the Hull reference is inherent in the art of honeycomb structures.

With respect to (c), (d), and (e), Hull discloses an adhesive applied to the honeycomb core layer 12, in order to bond said core to said skins 14,16. Hull further

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discloses said adhesive being of a film (tape) type inserted between honeycomb cells so as to attach to said skins. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the film-bonded skin and core layers as disclosed by Hull as the core of the overall shelf structure as disclosed by Wareheim. The motivation for including the film would be to provide a secure bond between the different portions of the overall shelf, making it structurally integral.

It is further noted that it is well known in the art of honeycomb structures to use an adhesive, including films or tapes, to bond upper and lower skin layers to the main honeycomb core. Such construction is shown in U.S. Patent Nos. 6,030,483 to Wilson, and 5,912,442 to Nye et al. It would have been further obvious to include said adhesive film as disclosed by Hull as a border of *both* the outside periphery *and* the inner through bores of the honeycomb shelf as disclosed by Wareheim in view of Hull as advanced above. The motivation for including a border layer on the periphery and within the through bores would be to cover exposure to any of the honeycomb core that typically contains rigid and sharp edges. Further motivation for including protective inserts and a border would be to provide the core with protection from outside elements, including fire, which is common in the art. The use of a fireproof tape-like or film-like material as the skins and inserts would be beneficial in that it would prevent damage to the core from fire, while allowing the overall system to retain the high strength-to-weight ratio inherent in the honeycomb core.

### ***Conclusion***

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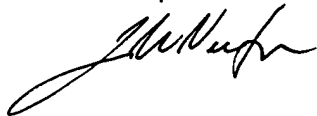
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jared W. Newton whose telephone number is (571) 272-2952. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Chilcot can be reached on (571) 272-6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWN

September 29, 2005



Richard Chilcot  
Supervisory Patent Examiner  
Technology Center